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Subject:	benthic risk: Areas of Potential Concern.
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Hey All-

For discussion/revision:
Attached is a draft memo that summarizes our approach to spatially identifying and quantifying areas of potential benthic risk.
There are 3 series of figures posted to our ftp site:
ftp://ftpuser:ftporr123@ftp.orr.noaa.gov/private/ARD/PortlandHarbor2/Exports/BenthicRisk/

At 2+ MB I thought they were a bit big to email (however I can email them upon request).

We have created a gridded cell approach to the river which consists of cells approximately .4 acres (17,242 square feet) generally aligned parallel to the shoreline. The shoreline used for this method is derived from the +13 NAVD88 line used by LWG in their Round 2 report and provided in the their GIS deliverables.

Several aspects of our analysis are intended to address shortcomings with the LWG data analysis:

1. Area weights based on the surface sediment sample locations- The combination thiessen polygon approach that they created results in a mis-representation of the area of influence for an individual point location and a potential illogical area weight. The grid cell approach that we have created gives generally equal weighted area to samples and can be used to aggregate areas that have sample information. These grid cells are not ideal in that a point may fall near the border of two cells and only impact the value of it's container cell. The area (0.4 acres) was chosen iteratively to represent a reasonably small area. It is 1/40th of a river mile.

2. (a) Includsion of Logistic Regression Modeling approach as a "line" or informative piece of evidence indicating potential risk to benthos
2. (b) exclusion of Hyallela growth endpoint completely
2. (c) exclusion of Total PAHs from analyte list for FPM

3. The Gi* statistical cluster analysis (Section 10.1.3.2.1) that LWG used for iAOPC identification effectively screened out areas that should be considered for benthic risk but that were not intensely sampled. For example, RM 5.6 was specifically sampled to confirm an "oily sheen" and high PAH values. There were only several samples allocated to this location to try and capture the extent of the previously indicated contaminants, which may have resulted in this area being screened out. This determination of spatial significant clusters is unacceptable for determintion of iAOPCs given the scale and extent of sampling that has been done and the nature of environmental contaminants.

We intend to use this depiction of "potential" areas of elevated benthic risk to interpret aggregated intial Areas of Potential Concern- note that red cells do not necessarily become an AOPC, but may warrant examination of the underlying data.

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